

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent

In re patent application of: FOSTER et al.

Serial No.: 09/679,643

Filed: October 5, 2000

For: S. AUREUS FIBRINOGEN BINDING PROTEIN GENE



Examiner:

**RECEIVED**

Art Unit: 1645 JAN 23 2001

Docket No.: TECH CENTER 1600/2900

P06282US02/BAS

**INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §1.98(d)**(For a Continuing Application other than a Rule 53d "Continued Prosecution Application")Assistant Commissioner for Patents  
Washington, D.C.

S I R:

Please consider and make of record pursuant to 37 C.F.R. §1.97-1.98 the information previously cited by or submitted to the Office in the prior application(s) relied on for an earlier filing date under 35 U.S.C. §120.

The following listing(s) of such information are attached hereto (check as appropriate):

☒ Form(s) PTO 892 listing information cited by the Office.☒ Form(s) PTO 1449 or FB-A820 listing information cited to the Office.

The prior application(s) is(are) identified in the application papers and in the enclosed listing form(s).

Favorable consideration is respectfully requested.

Respectfully submitted,

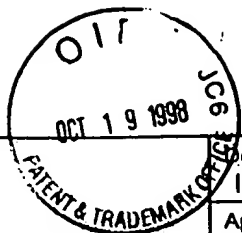
A handwritten signature in cursive script that reads "Douglas S. Johnson for". Below the signature, the number "28,578" is written.

Date: 19 January 2001

By: B. Aaron Schulman

Registration No.: 31,877

<b>Notice of References Cited</b>			Application No. <b>09/421,868</b>		Applicant(s) <b>Foster et al.</b>	
<b>U.S. PATENT DOCUMENTS</b>			Examiner <b>Graser, Jennifer</b>		Group Art Unit <b>RECEIVED</b>	
			Page 1 of 1			
<b>U.S. PATENT DOCUMENTS</b>						
		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
A						
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<b>FOREIGN PATENT DOCUMENTS</b>						
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<b>NON-PATENT DOCUMENTS</b>						
		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)				DATE
	u	Homonylo et al. Infection and Immunity. 1993. 61(6): 2479-2485.				1993
	v	McDevitt et al. Molecular Microbiology. January 1994. 11(2): 237-248.				1994
	w	Signas et al. Proc. Natl. Acad. Sci., USA, 1989, 86: 699-703.				1989
	x	Jonsson et al. Eur. J. Biochem. 1991, 202: 1041-1048.				1991



Sheet 1 of 3

Form PTO-1449

Pocket No.:  
INH 110Application No.  
08/293,728**RECEIVED**INFORMATION DISCLOSURE  
CITATIONApplicant:  
Timothy J. Foster and Damien L. McDevitt

JAN 23 2001

IN AN APPLICATION  
(Use several sheets if necessary)Filing Date:  
8/22/94Group Art Unit  
1802-1600/2000

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

BA	Amann, E. and Brosius, J. (1985). 'ATG Vectors' for regulated high-level expression of cloned genes in <u>Escherichia coli</u> . Gene 40, 183-190.
BB	Baier, R.E. (1977). The Organisation of blood components near interfaces. Ann N.Y. Acad Sci 283:17-36.
BC	Boden, M.K., and Flock, J.I. (1989). Fibrinogen-binding protein/clumping factor from <u>Staphylococcus aureus</u> . Infect. Immun. 57: 2358-2363.
BD	Boden, M.K., and Flock, J.I. (1992). Evidence for three different fibrinogen binding proteins with unique properties from <u>Staphylococcus aureus</u> strain Newman. Microbiol. Pathogen., 12(4), 289-298.
BE	Boden, M.K., and Flock, J.I. (1994). Cloning and characterization of a gene for a 19kDa Fibrinogen-binding protein from <u>Staphylococcus aureus</u> . Molec. Microbiol. 12(4), 599-606.
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BG	Cheung, A. and Fischetti, V.A. (1990). Role of surface proteins in staphylococcal adherence to catheters <u>in vitro</u> . J. Infect. Dis. 161, 1177-1186.
BH	Cheung, A.L., Kirshnan, N., Jaffe, E.A. and Fischetti, V.A. (1991). Fibrinogen acts as a bridging molecule in the adherence of <u>Staphylococcus aureus</u> to cultured human endothelial cells. J. Clin. Invest. 87, 2236-2245.
BI	Cheung, A.L., Yeaman, M.R. Sullam, P.M., Witt, M.D. and Bayer A.S. (1994). Role of the <u>sar</u> locus of <u>Staphylococcus aureus</u> in induction of endocarditis in rabbits. Infect. Immun. 62, 1719-1725.
BJ	Cottonaro, C.N., Roohk, H.V., Shimica, G., and Sperling, D.R. (1981). Quantitation and characterization of competitive protein binding to polymers. Trans Am. Soc. Artif. Inter. Organs 27:391-395.
BK	Davison, V.E., and Sandford, B.A. (1982). Factors influencing adherence of <u>Staphylococcus aureus</u> to Influenza A virus-infected cell cultures. Infect. Immun. 37:946-955.
BL	Duthie, E.S. (1954). Evidence of two forms of staphylococcal coagulase. J. Gen. Microbiol. 10:427-436.
BM	Espersen, F., Cleamensen, I., and Barkholt, V. (1985). Isolation of <u>Staphylococcus aureus</u> clumping factor. Infect. Immun. 49:700-708.
BN	Garrison, P.K. and Freedman, L.R. (1970). Experimental endocarditis. 1. Staphylococcal endocarditis in rabbits resulting from placement of a polyethylene catheter in the right side of the heart. Yale J. Biol. Med. 42, 394-410.
BO	Guan, K. and J.E. Dixon. (1991). Eukaryotic proteins expressed in <u>Echerichia coli</u> : An improved thrombin cleavage and purification procedure of fusion proteins with glutathione S-transferase. Anal. Biochem. 192, 262-267.

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Date Considered

Sheet 2 of 2 **RECEIVED**

Form PTO-1442  INFORMATION DISCLOSURE CITATION  IN AN APPLICATION (Use several sheets if necessary)	Docket No.: INH 110		Application No. 08/293.728, JAN 23 2001
	Applicant: Timothy J. Foster and Damien L. McDevitt		TECHNICAL 1000/2900
	Filing Date: 8/22/94	Group Art Unit 1802-1641	
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
	CA	Hawiger, J.S, Hammond, D.K., Timmons, S. and Budzynski, A.Z. (1978). Interaction of human fibrinogen with staphylococci: presence of a binding region on normal and abnormal fibrinogen variants and fibrinogen derivatives. Blood 51:799-812.	
	CB	Hawiger, J.S., Timmons, S., Strong, D.O., Cottrell, B.A., Riley, M., and Doolittle, R.F. (1982). Identification of a region of human fibrinogen interacting with staphylococcal clumping factor. Biochemistry 21:1407-1413.	
	CC	Herrmann, M., Lai, Q.J., Albrecht, R.M., Mosher, D.F. and Proctor, R.A. (1993). Adhesion of <u>Staphylococcus aureus</u> to surface-bound platelets: role of fibrinogen/fibrin and platelet integrins. J. Infect. Dis. 167, 312-322.	
	CD	Homonylo McGavin, M., Krajewska-Pietrasik, D., Ryden, C. and Hook, M. (1993). Identification of a <u>Staphylococcus aureus</u> extracellular matrix-binding protein with broad specificity. Infect. Immun. 61, 2479-2485.	
	CE	Kochwa, S., Litwak, R.S. Rosenfield, R.E. and Leonard, E.F. (1977). Blood elements at foreign surfaces: a biochemical approach to study the adsorption of plasma proteins. Ann. NY Acad Sci 238, 27-49.	
	CF	Kristinsson, K.G. (1989). Adherence of staphylococci to intravascular catheters. J. Med. Microbiol. 28:249-257.	
	CG	Lantz, M.S., Allen, R.D., Bounelis, P., Switzalski, L.M. and Hook, M. (1990). <u>Bacteriodes gingivalis</u> and <u>Bacteriodes intermedius</u> recognize different sites on human fibrinogen. J. Bacteriol. 172, 716-726.	
	CH	Lee, C.Y., Buranem, S.L. and Ye, Z-H. (1991). Construction of single copy integration vectors for <u>Staphylococcus aureus</u> . Gene 103:101-105.	
	CI	McDevitt, D., Vaudaux P. and Foster, T.J. (1992). Genetic evidence that bound coagulase of <u>Staphylococcus aureus</u> is not clumping factor. Infect. Immun. 60:1514-1523.	
	CJ	McDevitt, D., Francois, P., Vaudaux, P. and Foster T.J. (1994). Molecular characterization of the fibrinogen receptor (clumping factor) of <u>Staphylococcus aureus</u> . Molec. Microbiol. 11, 237-248.	
	CK	Maki, D.G. (1982). Infections associated with intravascular lines. In <u>Current topics in infectious diseases</u> , Vol 3 Remington J.S., and Swartz, M.N. (eds.). McGraw Hill, New York, pp. 309-363.	
CL	Nowicki, B., Rhen, M., Vaisanen-Rhen, V., Pere, A. and Korhonen, T.K. (1984). Immunofluorescence study of fimbrial phase variation in <u>Escherichia coli</u> KS71. J. Bacteriol. 160, 691-695.		
CM	Patel, A.H., Nowlan, P. Weavers, E.D. and Foster, T.J. (1987). Virulence of protein A-deficient and alpha toxin-deficient mutants of <u>Staphylococcus aureus</u> isolated by allelic-replacement. Infect. Immun. 55, 3103-3110.		
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Sheet 3 of 3

Form PTO-1449	Document No.: H 110	Application No. 08/293.728	TECH CENTER 1600/2900
	Applicant: Timothy J. Foster and Damien L. McDevitt		
INFORMATION DISCLOSURE CITATION  IN AN APPLICATION (Use several sheets if necessary)	Filing Date: 8/22/94	Group Art Unit 1802-641	

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

DA	Patti, J.M., Jonsson, H., Guss, B., Switalski, L.M., Wiberg, K., Lindberg, M. and Hook M. (1992). Molecular characterization and expression of a gene encoding a <u>Staphylococcus aureus</u> collagen adhesin. J. Biol. Chem. 267, 4766-772.
DB	Schneewind, O., Mihaylova, D. and Model, P. (1993). Cell wall sorting signals in surface proteins of Gram-positive bacteria. EMBO J. 12, 3-4811.
DC	Signas, C., Raucci, G., Jonsson, K., Lindgren, P.E., Anantharamaiah, G.M., Hook, M. and Lindberg, M. (1989). Nucleotide sequence of the gene for a fibronectin-binding protein from <u>Staphylococcus aureus</u> : use of this peptide sequence in the synthesis of biologically active peptides. Proc. Natl. Acad. Sci. USA 86:699-703.
DD	Switalski, L.M. (1976). Isolation and purification of staphylococcal clumping factor. In <u>Staphylococci and staphylococcal diseases</u> . Jeljaszewicz, J. (ed.) Gustav Fischer Verlag, Stuttgart, pp. 413-425.
DE	Tomich, P.K., An, F.Y. and Clewell, D.B. (1980). Properties of erythromycin inducible transposon Tn917 in <u>Streptococcus faecalis</u> . J. Bacteriol. 141, 1366-1374.
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DI	Vaudaux, P., Pittet, D., Haeberli, H., Lerch, P.G., Morgenthaler, J.J., Proctor, R.A., Waldvogel, F.A. and Lew, D.P. (1993). Fibronectin is more active than fibrin or fibrinogen in promoting <u>Staphylococcus aureus</u> adherence to inserted intravascular devices. J Infect. Dis. 167, 633-641.
DJ	Yanisch-Perron, C., Veira, J.C. and Messing, J. (1985). Improved M13 phage cloning vectors and host strains: nucleotide sequences of the M13mpl8 and pUC19 vectors. Gene 33:103-119.
DK	Youngman, P. (1985). Plasmid vectors for recovering and exploiting Tn917 transpositions in Bacillus and other Gram-positives. In Plasmids: a practical approach. Hardy, K. (ed.), IRL Press, Oxford, pp. 79-103.

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PTO Form 1449		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket No.: P-9050-24420		TECH CENTER 1600/2500	
INFORMATION DISCLOSURE CITATION				Applicant: Timothy James FOSTER et al.		Not Yet Assigned	
Sheet 1 of 3				Filing Date: Concurrently Herewith		Group: Not Assigned	
Examiner Initials		OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)					
JG	AA	Amann, E. and Brosius, J. (1985). "'ATG Vectors' for regulated high level expression of cloned genes in <u>Esherichia coli</u> ." Gene 40, 183-190.					
JG	AB	Baier, R.E. (1977). "The organisation of blood components near interfaces." Ann N.Y. Acad Sci 283:17-36.					
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<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609.          Draw line through citation if not in conformance and not considered.          Include copy of this form with next communication to Applicant.</p>							
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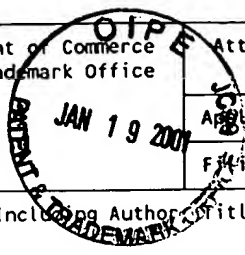
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J. Chaser 11/30/98

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Group: Not Assigned

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EG	BA Nowicki, B., Rhen, M., Vaisanen-Rhen, V., Pere, A. and Korhonen, T.K. (1984). "Immunofluorescence study of fimbrial phase variation in <u>Escherichia coli</u> KS71." J. Bacteriol. 160, 691-695.
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	BC Patti, J.M., Jonsson, H., Guss, B., Switalski, L.M., Wiberg, K., Lindberg, M. and Hook M. (1992). "Molecular Characterization and expression of a gene encoding a <u>Staphylococcus aureus</u> collagen adhesin." J. Biol. Chem. 267, 4766-772.
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	BF Switalski, L.M. (1976). "Isolation and purification of staphylococcal clumping factor." In <u>Staphylococci and staphylococcal diseases</u> . Jeljaszewicz, J. (ed.) Gustav Fischer Verlag, Stuttgart, pp. 413-425.
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	BK Vaudaux, P., Pittet, D., Haeberli, H. Lerch, P.G., Morgenthaler, J.J., Proctor, R.A., Waldvogel, F.A. and Lew D.P. (1993). "Fibronectin is more active than fibrin or fibrinogen in promoting <u>Staphylococcus aureus</u> adherence to inserted intravascular devices." J. Infect. Dis. 167, 633-641.
	BL Yanisch-Perron, C., Veira, J.C. and Messing, J. (1985). "Improved M13 phage cloning vectors and host strains: nucleotide sequences of the M13mp18 and pUC19 vectors." Gene 33:103-119.
	BM Yougman, P. (1985). "Plasmid vectors for recovering and exploiting <u>In917</u> transpositions in Bacillus and other Gram-positives." In Plasmids: a Practical approach. Hardy, K. (ed.), IRL Press, Oxford, pp. 79-103.

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AF	Chhatwal, G.S., Albohn, G. and Blobel, H. (1987). "Interaction between fibronectin and purified staphyococcal clumping factor." FEMS Microbiol. Lett. 44, 147-151.			
AG	Cheung, A. and Fischetti, V.A. (1990). "Role of surface proteins in staphylococcal adherence to catheters <u>in vitro</u> ." J. Infect. Dis. 161, 1177-1186.			
AH	Cheung, A.L. Kirshnan, N., Jaffe, E.A. and Fischetti, V.A. (1991). "Fibrinogen acts as a bridging molecule in the adherence of <u>Staphylococcus aureus</u> to cultured human endothelial cells." J. Clin. Invest. 87, 2236-2245.			
AI	Cheung, A.L., Yeaman, M.R. Sullam, P.M., Witt, M.D. and Bayer A.S. (1994). "Role of the <u>sar</u> locus of <u>Staphylococcus aureus</u> in induction of endocarditis in rabbits." Infect. Immun. 62, 1719-1725.			
AJ	Cottonaro, C.N. Roohk, H.V., Shimica, G. and Sperling, D.R. (1981). "Quantitation and characterization of competitive protein binding to polymers." Trans Am. Soc. Artif. Inter. Organs 27:391-395.			
AK	Davidson, V.E., and Sandford, B.A. (1982). "Factors influencing adherence of <u>Staphylococcus aureus</u> to Influenza A virus-infected cell cultures." Infect. Immun, 37:946-955.			
AL	Duthie, E.S. (1954). "Evidence of two forms of staphylococcal coagulase." J. Gen. Microbiol. 10:427-436.			
AM	Espersen, F., Clemmensen, I., and Barkholt, V. (1985). "Isolation of <u>Staphylococcus aureus</u> clumping factor." Infect. Immun. 49:700-708.			
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Examiner Initials	OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)						
AN	Garrison, P.K. and Freedman, L.R. (1970). "Experimental endocarditis. 1. Staphylococcal endocarditis in rabbits resulting from placement of a polyethylene catheter in the right side of the heart." Yale J. Biol. Med. 42, 394-410.						
AO	Guan, K. and J.E. Dixon. (1991). "Eukaryotic proteins expressed in <u>Escherichia coli</u> : An improved thrombin cleavage and purification procedure of fusion proteins with glutathione S-transferase." Anal. Biochem. 192, 262-267.						
AP	Hawiger, J.S., Hammond, D.K., Timmons, S. and Budzynski, A.Z. (1978). "Interaction of human fibrinogen with staphylococci: presence of a binding region on a normal and abnormal fibrinogen variants and fibrinogen Blood 51:799-812.						
AQ	Hawiger, J.S., Timmons, S., Strong, D.D., Cottrell, B.A., Riley, M., and Doolittle, R.F. (1982). "Identification of a region of human fibrinogen interacting with staphylococcal clumping factor." Biochemistry 21:1407-1413.						
AR	Herrmann, M., Lai, Q.J., Albrecht, R.M., Mosher, D.F. and Proctor, R.A. (1993). "Adhesion of a <u>Staphylococcus aureus</u> to surface-bound platelets: role of fibrinogen/fibrin and platelet integrins." J. Infect. Dis. 167, 312-322.						
AS	Homonylo McGavin, M., Krajewska-Pietrasik, D., Ryden, C. and Hook, M. (1993). "Identification of a <u>Staphylococcus aureus</u> extracellular matrix-binding protein with broad specificity." Infect. Immun. 61, 2479-2485.						
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AU	Kristinsson, K.G. (1989). "Adherence of staphylococci to intravascular catheters." J. Med. Microbiol. 28:249-257.						
AV	Lantz, M.S., Allen, R.D., Bounelis, P., Switzalski, L.M. and Hook, M. (1990). " <u>Bacteriodes gingivatis</u> and <u>Bacteriodes intermedius</u> recognize different sites on human fibrinogen." J. Bacteriol. 172, 716-726.						
AW	Lee, C.Y., Buranem, S.L. and Ye, Z-H. (1991). "Construction of single copy integration vectors for <u>Staphylococcus aureus</u> . Gene 103:101-105.						
AX	McDevitt, D., Vaudaux P. and Foster, T.J. (1992). "Genetic evidence that bound coagulase of <u>Staphylococcus aureus</u> is not clumping factor." Infect. Immun. 60:1514-1523.						
AY	McDevitt, D., Francois, P., Vaudaux, P. and Foster T.J. (1994). "Molecular characterization of the fibrinogen receptor (clumping factor) of <u>Staphylococcus aureus</u> . Molec. Microbiol. 11, 237-248.						
AZ	Maki, D.G. (1992). "Infections associated with intravascular lines." In <u>Current topics in infectious diseases</u> , Vol. 3 Remington J.S., and Swartz, M.N. (eds.). McGraw Hill, New York, pp. 309-363.						
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Examiner Initials	OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)			
	BA Nowicki, B., Rhen, M., Vaisanen-Rhen, V., Pere, A. and Korhonen, T.K. (1984). "Immunofluorescence study of fimbrial phase variation in <u>Escherichia coli</u> KS71." J. Bacteriol. 160, 691-695.			
	BB Patel, A.H., Nowlan, P. Weavers, E.D. and Foster, T.J. (1987). "Virulence of protein A-deficient and alpha toxin-deficient mutants of <u>Staphylococcus aureus</u> isolated by allelic-replacement." Infect. Immun. 55,3103-3110.			
	BC Patti, J.M., Jonsson, H., Guss, B., Switalski, L.M., Wiberg, K., Lindberg, M. and Hook M. (1992). "Molecular Characterization and expression of a gene encoding a <u>Staphylococcus aureus</u> collagen adhesin." J. Biol. Chem. 267, 4766-772.			
	BD Schneewind, O., Mihaylova, D. and Model, P. (1993). "Cell wall sorting signals in surface proteins of Gram-positive bacteria." EMBO J.12, 4803-4811.			
	BE Signas, C., Raucci, G., Jonsson, K., Lindgren, P.E., Anantharamaiah, G.M., Hook, M. and Lindberg, M. (1989). "Nucleotide sequence of the gene for a fibronectin-binding protein from <u>Staphylococcus aureus</u> : use of this peptide sequence in the synthesis of biologically active peptides." Proc. Natl. Acad. Sci. USA 86:699-703.			
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	BI Vaudaux, P., Pittet, D., Haeblerli, A., Huggler, E., Nydegger, U.E., Lew, D.P. and Waldvogel, F.A. (1989). "Host factors selectively increase staphylococcal adherence on inserted catheters. A role for fibronectin and fibrinogen or fibrin." J. Infect. Dis. 160, 865-875.			
	BJ Vaudaux, P., Proctor, R.A., McDevitt, D., Foster, T.J., Lew, D.P., Wabers, H. and S. Cooper. (1991). "Use of adherence defective mutants of <u>Staphylococcus aureus</u> (SA) to identify adherence promoting proteins deposited from profusing blood ...." Program Abstr. 31st Intersci. Conf. Antimicrobiol. Agents Chemother., abstr 1068.			
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	BM Yougman, P. (1985). "Plasmid vectors for recovering and exploiting <u>In917</u> transpositions in Bacillus and other Gram-positives." In Plasmids: a Practical approach. Hardy, K. (ed.), IRL Press, Oxford, pp. 79-103.			
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